90-572

No.

Supreme Court, U.S.
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IN THE

Supreme Court of the United States

OCTOBER TERM, 1990

WILSON SPORTING GOODS CO.,

Petitioner,

v.

DAVID GEOFFREY & ASSOCIATES d/b/a SLAZENGER,

and

DUNLOP SLAZENGER CORPORATION
aka DUNLOP SPORTS CORPORATION,

Respondents.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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QUESTIONS PRESENTED

Has the Federal Circuit, by reversing a jury verdict of patent infringement under the doctrine of equivalents, and by adopting a new hypothetical claim rule which requires determining factual issues as matters of law, established a new standard of patent infringement which:

a) is contrary to this Court's holding in *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 339 U.S. 605 (1950), that infringement under the doctrine of equivalents is a question of fact, and

b) denied petitioner's Constitutional right to a jury trial.

In view of this Court's holding in *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 339 U.S. 605 (1950), that infringement under the doctrine of equivalents is a question of fact, is the Federal Circuit free to make a *de novo* determination of what the prior art shows when a jury verdict of infringement is supported by substantial evidence?

RULE 29.1 STATEMENT

Petitioner Wilson Sporting Goods Co. is a wholly owned subsidiary of WSGC Holdings, Inc., which is a wholly owned subsidiary of Amer Group, Ltd.

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Respondents.

PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

Petitioner respectfully prays that a writ of certiorari issue to review the judgment of the United States Court of Appeals for the Federal Circuit in its cause Nos. 89-1554 and 89-1555. The judgment was entered on May 23, 1990. Rehearing was denied on July 5, 1990.

OPINIONS BELOW

The opinion of the Federal Circuit is reported at 904 F.2d 677 and is printed in the appendix hereto at page 1a. The Federal Circuit denied a petition for rehearing on July 5, 1990 (App. 22a), and issued its judgment as a mandate on July 12, 1990 (App. 20a). A suggestion for rehearing in banc was declined on July 26, 1990 (App. 24a).

In the district court a jury returned a verdict that the patent was valid and infringed on March 3, 1989 (App. 25a-26a). The district court entered Judgment on the issues of validity and infringement on March 6, 1989 (App. 28a), and entered an Amended Judgment on May 5, 1989 (App. 27a).

JURISDICTION

The judgment sought to be reviewed was entered on May 23, 1990 and rehearing was denied on July 5, 1990. This Court has jurisdiction by virtue of 28 U.S.C. §1254(1).

THE CONSTITUTIONAL PROVISIONS AND RULES INVOLVED

U.S. Constitution, Amendment VII

> "In Suits at common law, where the value in controversy shall exceed twenty dollars, the right of trial by jury shall be preserved, and no fact tried by a jury, shall be otherwise re-examined in any Court of the United States, than according to the rules of the common law."

Rule 38 of the Federal Rules of Civil Procedure

> "(a) Right Preserved. The right of trial by jury as declared by the Seventh Amendment to the Constitution or as given by a statute of the United States shall be preserved to the parties inviolate."

STATEMENT OF THE CASE

Petitioner Wilson owns Patent No. 4,560,168 which describes a golf ball with a particular dimple pattern. Because of the rules of the United States Golf Association, new dimple designs provide the only current opportunity for increasing the distance of golf balls. Golfers have been searching for longer balls for more than a century, and the Federal Circuit acknowledged that "distance sells." Improved dimple patterns therefore have significant commercial value.

Wilson's patented dimple pattern provides a symmetrical arrangement of the dimples by dividing the surface of the golf ball into 80 non-identical triangles and then placing the dimples in strategic locations in the triangles. The procedure for arranging the dimples is described and illustrated in the Federal Circuit's opinion at App. 3a-6a. The claims of the patent describe dimples which are arranged so that they do not intersect six great circles on the ball. A great circle is a line which passes around the widest part of the ball. Wilson contended that the patented dimple pattern made its Ultra golf ball the "longest ball."

Wilson sued Dunlop Slazenger Corporation for infringing the patent by selling Maxfli Tour Limited and Slazenger golf balls. Dunlop sold the Maxfli Tour Limited balls to distributors and sold the Slazenger balls to David Geoffrey & Associates ("DGA"). Wilson separately sued DGA for infringing the patent by selling the Slazenger ball.

On both the Maxfli Tour Limited and the Slazenger balls the dimples are arranged as claimed in the Wilson patent except that some of the dimples intersect the six great circles by from 4 to 8.7 thousandths of an inch (0.004 to 0.0087 inch). The claims of Wilson's patent were therefore not literally infringed, and Wilson asserted infringement under the doctrine of equivalents.

The Dunlop case went to trial first. Wilson demanded a jury trial, and the jury returned a verdict that the patent was valid, infringed, and willfully infringed.

Wilson then moved for summary judgment in the DGA case, which was granted.

The appeals by Dunlop and DGA were consolidated in the Federal Circuit.

The Federal Circuit stated that infringement may be found under the doctrine of equivalents if an accused product performs substantially the same overall function, in substantially the same way, to obtain substantially the same overall result as the claimed invention (App. 12a). However, the Federal Circuit went on to state that even if the test of equivalents is met, there can be no infringement if the asserted scope of equivalency would encompass the prior art; and the issue of whether an asserted range of equivalents would cover what is already in the public domain is one of law which the Federal Circuit reviews *de novo* (App. 12a-13a).

The Federal Circuit then adopted a new rule for determining whether infringement under the doctrine of equivalents may be found:

> "To simplify analysis and bring the issue onto familiar turf, it may be helpful to conceptualize the limitation on the scope of equivalents by visualizing a *hypothetical* patent claim, sufficient in scope to *literally* cover the accused product. The pertinent question then becomes whether that hypothetical claim could have been allowed by the PTO over the prior art. If not, then it would be improper to permit the patentee to obtain that coverage in an infringement suit under the doctrine of equivalents. If the hypothetical claim could have been allowed, then *prior art* is not a bar to infringement under the doctrine of equivalents.

> "Viewing the issue in this manner allows use of traditional patentability rules and permits a more precise analysis than determining whether an *accused product* (which has no claim limitations on which to focus) would have been obvious in view of the prior art." (App. 14a, emphasis in original.)

Even though the Federal Circuit announced a new hypothetical claim rule which was not argued by either party, the Court imposed on Wilson the burden of proving that the hypothetical claim would have been allowed by the Patent and Trademark Office ("PTO"):

> "[T]here is no logical reason why that burden should shift to the accused infringer simply because infringement in this context might require an inquiry into the patentability of a *hypothetical* claim. Any other approach would ignore the realities of what happens in the PTO and violate established patent law . . . .
>
> "The specific question before us, then, is whether Wilson has proved that a hypothetical claim, similar to claim 1 but broad enough to literally cover Dunlop's balls, could have been patentable." (App. 15a, emphasis in original.)

The Court then proceeded to consider *de novo* a hypothetical claim which would literally cover Dunlop's balls. The Slazenger balls contain 480 dimples, and 60 of those dimples intersect the six great circles by four thousandths of an inch (0.004 inch). The Maxfli Tour Limited balls have 432 dimples, and 60 dimples intersect the great circles by either 7.5 thousandths of an inch (0.0075 inch) or 8.7 thousandths of an inch (0.0087 inch). The hypothetical claim would include those intersections.

Although the Federal Circuit stated that the most pertinent prior art was a 1932 British patent to Pugh, the Court

considered a Uniroyal ball when determining the patentability of the hypothetical claim. No sample of the Uniroyal ball was admitted into evidence because Dunlop failed to give 30 days' notice of prior art which is required by 35 U.S.C. §282. Although the Court said that there was "extensive testimony on its characteristics" (App. 7a n.3), the testimony on the Uniroyal ball was limited and consisted of only 7 pages of cross examination and 3 pages of redirect of Wilson's witness (Trial Tr. 418-24, 459-61).

The Federal Circuit considered the testimony regarding the Uniroyal ball *de novo* and found as a fact that the differences between the hypothetical claim and the Uniroyal ball were slight and relatively minor and concluded that the hypothetical claim "would have been obvious in view of the Uniroyal ball" (App. 16a). The Federal Circuit concluded by holding that the district court erred in denying Dunlop's motion for JNOV on infringement because, as a matter of law, a range of equivalents broad enough to cover Dunlop's balls would also have encompassed the prior art (App. 19a).

Wilson filed a petition for rehearing, arguing that the Federal Circuit had erroneously found as a fact that the prior art Uniroyal ball had only 30 intersecting dimples when it really had at least 108 intersecting dimples. The hypothetical claim drafted by the Federal Circuit allows 60 intersecting dimples. Such a claim does not read on the Uniroyal ball with substantially more intersections and is not obvious in view of the Uniroyal ball. Wilson also suggested a rehearing in banc on the ground that the decision was contrary to this Court's decision in *Graver Tank & Mfg. Co.* v. *Linde Air Products, Co.*, 339 U.S. 605 (1950). The Federal Circuit denied the rehearing and declined the suggestion for rehearing in banc. (App. 22a, 24a).

REASONS FOR GRANTING THE WRIT

THE FEDERAL CIRCUIT'S DECISION IS IN DIRECT CONFLICT WITH THIS COURT'S PRECEDENT AND DENIED PETITIONER'S RIGHT TO A JURY TRIAL

A. Doctrine of Equivalents Is a Question of Fact

The Federal Circuit decided the issue of equivalents as a matter of law and thereby contravened this Court's holding in *Graver Tank & Mfg. Co.* v. *Linde Air Products, Co.*, 339 U.S. 605 (1950), that equivalents is a question of fact. Since the Federal Circuit has exclusive appellate jurisdiction in patent cases, 28 U.S.C. §1295, district courts will be required to follow the Federal Circuit's decision even though it conflicts with Supreme Court precedent.

This Court's decision in *Graver* is the seminal case on doctrine of equivalents and has guided courts and the patent bar for the past 40 years. The citations of *Graver* in Shepard's 1984 edition alone occupy more than 10 columns.

Although *Graver* is the most famous pronouncement on the doctrine of equivalents, the doctrine has been applied for more than 100 years. The *Graver* court attributed the origin of the doctrine to *Winans* v. *Denmead*, 56 U.S. (15 How.) 330 (1853). In *Winans* this Court reversed a directed verdict and held that the issue of infringement beyond the literal language of the claim is a factual issue for the jury. 56 U.S. (15 How.) at 344.

Graver made clear the reasons why a patent can be infringed under the doctrine of equivalents even if the patent claims are not literally infringed:

> "But courts have also recognized that to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and

useless thing. Such a limitation would leave room for — indeed encourage — the unscrupulous copyist to make unimportant and insubstantial changes and substitutions in the patent which, though adding nothing, would be enough to take the copied matter outside the claim, and hence outside the reach of law. One who seeks to pirate an invention, like one who seeks to pirate a copyrighted book or play, may be expected to introduce minor variations to conceal and shelter the piracy. Outright and forthright duplication is a dull and very rare type of infringement. To prohibit no other would place the inventor at the mercy of verbalism and would be subordinating substance to form. It would deprive him of the benefit of his invention and would foster concealment rather than disclosure of inventions, which is one of the primary purposes of the patent system.

"The doctrine of equivalents evolved in response to this experience. The essence of the doctrine is that one may not practice a fraud on a patent. Originating almost a century ago in the case of Winans v. Denmead (US) 15 How 330, 14 L ed 717, it has been consistently applied by this Court and the lower federal courts, and continues today ready and available for utilization when the proper circumstances for its application arise. 'To temper unsparing logic and prevent an infringer from stealing the benefit of the invention' a patentee may invoke this doctrine to proceed against the producer of a device 'if it performs substantially the same function in substantially the same way to obtain the same result.' "

The controlling point for this case is that *Graver* specifically held that the issue of equivalents is a question of *fact*:

> "A finding of equivalence is a determination of fact. . . . It is to be decided by the trial court and that court's decision, under general principles of appellate review, should not be disturbed unless clearly erroneous." 339 U.S. at 607-08.

B. The Consideration of Prior Art in Deciding Equivalents Is Necessarily a Factual Inquiry

In deciding the issue of equivalents as a question of fact, the fact finder also considers the prior art:

> "What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case." 339 U.S. at 609.

But *Graver* made it clear that the consideration of the prior art is *also* an issue of fact:

> "Particularly important, in addition, were the disclosures of the prior art, also contained in the record. The Miller patent, No. 1,754,566, which preceded the patent in suit, taught the use of manganese silicate in welding fluxes (R. 969,971). . . . *It is not for this Court to even essay an independent evaluation of this evidence. This is the function of the trial court.*" 339 U.S. at 611, emphasis added.

The Federal Circuit failed to follow this Court's mandate that the consideration of prior art is a question of fact. The jury decided the issue of equivalents in favor of Wilson,

and the Federal Circuit's reversal of the district court's judgment on the basis of

1. *de novo* and erroneous interpretation of the prior art Uniroyal ball and

2. *de novo* consideration of the patentability of a hypothetical patent claim which the Federal Circuit drafted

denied Wilson's Constitutional right to a jury trial.

The jury verdict in favor of Wilson can be overturned only if it is not supported by substantial evidence. The Federal Circuit did not rule that the jury verdict was not supported by substantial evidence. In fact, the Court presumed, as it must, "that the jury resolved underlying evidentiary conflicts in Wilson's favor" (App. 13a). The Federal Circuit reversed the jury finding of infringement only by engaging in *de novo* fact finding under the guise of a new rule of law.

C. The Federal Circuit's Decision Adopts the Dissent in *Graver* and Rejects the Majority

The Federal Circuit's decision follows the dissent in *Graver* rather than the majority. The dissent in *Graver* argued that the doctrine of equivalents should not be applied because the prior art prevented obtaining a patent on the infringing product:

> "Moreover, a doctrine which is said to protect against practicing 'a fraud on a patent' is used to extend a patent to a composition which could not be patented. For manganese silicate had been covered by prior patents, now expired. Thus we end with a strange anomaly: a monopoly is obtained on an unpatented and unpatentable article." 339 U.S. at 618.

The dissent disregarded the infringer's piracy of the invention and attempted to prevent application of the doctrine of equivalents if the accused product was not patentable over the prior art. In other words, the doctrine of equivalents could not be applied if the accused product was *obvious* in view of the prior art. That approach was rejected by the majority, which held that the doctrine of equivalents could still be applied.

The Federal Circuit's holding in this case, which considers the patentability of a hypothetical claim which covers the infringing product, contravenes the majority holding in *Graver* and adopts the minority view which was specifically rejected in *Graver*. The minority view of *Graver* will thus be controlling in all patent cases unless this Court acts to preserve its authority.

Wilson acknowledges that under *Graver* patent claims cannot be extended to cover a prior art product. However, the limitation of the prior art applies only if the product which is accused of infringement is *identical* to the prior art. If there are differences between the accused product and the prior art, and if the infringer attempts to pirate the invention rather than follow the prior art, the doctrine of equivalents permits the jury to make the factual determination of infringement under the doctrine of equivalents. In accordance with *Graver*, the jury is free to make that determination without considering the patentability of the accused product. Any other rule would follow the dissent in *Graver* rather than the majority.

D. Dunlop's Golf Balls Follow the Invention and Not the Prior Art

In this case the Federal Circuit acknowledged that Dunlop's golf balls are *different* than the prior art (App. 16a). The jury not only found infringement under the doctrine of equivalents but also found that Dunlop was a *willful* infringer. After considering the evidence at trial, the jury

obviously concluded that Dunlop's balls were based on Wilson's patented ball and not the prior art. The Federal Circuit should not be allowed to overturn that purely factual determination by treating the doctrine of equivalents as a question of law.

The jury was in a far better position than the Federal Circuit to compare the claims and Dunlop's balls with the prior art. The only evidence regarding the prior art Uniroyal ball was the oral testimony of one witness, and the jury had the opportunity to see and hear that witness. Instead of accepting the jury's interpretation of the prior art, the Federal Circuit considered the prior art *de novo*, thereby usurping the role of the jury and depriving Wilson of its Constitutional right to a jury trial.

In usurping the jury's role in considering the prior art, the Federal Circuit also misinterpreted a crucial aspect of the prior art Uniroyal ball. The Federal Circuit found as a fact that the Uniroyal ball has 30 dimples which intersect the 6 great circles (App. 7a, 16a). However, the testimony on the Uniroyal ball was that there were a *minimum* of 30 intersecting dimples on *each* great circle.

> "Q. How many dimples were arranged that could possibly intersect with the great circles other than the parting line?
>
> A. On a *given* great circle, fifty.
>
> Q. And how many actually intersected?
>
> A. A minimum of thirty." (Trial Transcript 423, emphasis added.)

Since there are 5 great circles other than the parting line, the Uniroyal ball obviously has many more than 30 intersecting dimples. Although Wilson urged that error in its petition for rehearing and argued that the evidence showed that the Uniroyal ball had at least 108 intersecting dimples, the petition was denied.

E. Even if the Federal Circuit's Hypothetical Claim Rule Is Accepted, the Issue of Patentability Necessarily Includes Questions of Fact

Even if the newly announced hypothetical claim analysis is accepted, that analysis requires determination of factual issues. Factual issues must be reserved for the jury. The Federal Circuit acknowledged that the hypothetical claim was not *identical* to the Uniroyal ball and that patentability of the hypothetical claim must be determined by the obviousness standard (App. 16a.). However, in the seminal case on the obviousness standard, *Graham* v. *John Deere Co.*, 383 U.S. 1, 17-18 (1966), this Court held that a decision on obviousness requires the determination of several factual issues:

> "the §103 condition, which is but one of three conditions, each of which must be satisfied, lends itself to several basic factual inquiries. Under §103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy." 383 U.S. at 17-18.

The Federal Circuit acknowledged that it decided the patentability of the hypothetical claim *de novo* (App. 13a, 19a). It therefore ignored this Court's mandate in *Graham* and deprived Wilson of a jury trial on the factual issues of obviousness, namely, the scope and content of the prior art (what the dimple pattern of the Uniroyal ball is), the differences between the prior art and the hypothetical claim (do

more than 60 dimples on the Uniroyal ball intersect great circles and by how much), and the level of ordinary skill in the art at the time of the invention.

THE FEDERAL CIRCUIT'S HYPOTHETICAL CLAIM ANALYSIS CREATES ILLOGICAL RESULTS

A. A Dependent Claim Can Now Be Infringed Even if the Independent Claim Is Not

The Federal Circuit's decision not only contravenes this Court's decision in *Graver* but requires departure from a rule of patent law which was universally regarded as "axiomatic". The application of the newly announced hypothetical claim analysis creates the surprising and illogical result that a dependent claim can now be infringed even if the independent claim is not infringed. Section 112 of the Patent Act, 35 U.S.C. §112, states that a dependent claim incorporates by reference all the limitations of the claim to which it refers. As a result, the Federal Circuit has stated:

> "It is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed." *Wahpeton Canvas Co.* v. *Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir. 1989).

In this case the Federal Circuit acknowledged the foregoing proposition as "no doubt generally correct", but stated that "it does not apply in the circumstances of this case." (App. 17a) That conclusion is the necessary result of the hypothetical claim analysis since a hypothetical dependent claim which includes a description of additional structure might be patentable even if the independent claim is not.

Under the Federal Circuit's hypothetical claim analysis, a competitor can no longer be safe in concluding that he does not infringe a patent if he does not infringe the independent claims. Every dependent claim must be considered under the

hypothetical claim analysis. Even then a definite conclusion could not be reached, for the Federal Circuit has also stated that under the doctrine of equivalents, "a copier rarely knows whether his product 'infringes' a patent or not until a district court passes on the issue." *Paper Converting Machine Co.* v. *Magna-Graphics Corp.*, 745 F.2d 11, 19 (Fed. Cir. 1984).

B. The New Burden of Proof Is Unworkable

The Federal Circuit decision also places the burden of proving the patentability of the hypothetical claim on the patent owner (App. 15a). That conclusion will require a radical departure in the order of proof in patent cases. Heretofore, a patent owner plaintiff was required in his case-in-chief only to present evidence of infringement because a patent is presumed to be valid under 35 U.S.C. §282. Indeed, the Federal Circuit has previously urged that patent owners not be allowed to present evidence of validity:

> "The resulting erroneous but clear impression that patentees bear a burden of 'proving validity' has frequently resulted in cluttered records, irrelevant detours, undue burdens on the judicial process, and unnecessary work for the trial court." *Orthokinetics, Inc.* v. *Safety Travel Chairs, Inc.*, 806 F.2d 1565,1571 (Fed. Cir. 1986).

Now a patent owner, in order to avoid a directed verdict at the close of his case, will be required to prove the patentability of a hypothetical claim over the prior art as part of his case-in-chief even before the defendant introduces the prior art on which he will rely. How can this be done? The more logical rule is the time-honored approach that prior art is in the nature of an affirmative defense which must be introduced in the defendant's case.

C. Wilson Has Not Had an Opportunity to Meet the New Burden of Proof

Perhaps the most illogical result of the Federal Circuit decision is the conclusion that Wilson failed to carry its burden of proving the patentability of the hypothetical claim even though no one had ever heard of a hypothetical claim before the decision:

> "The specific question before us is whether Wilson has proved that a hypothetical claim, similar to claim 1 but broad enough to cover Dunlop's balls, could have been patentable." (App. 15a)

The Federal Circuit did not remand but instead reversed and entered judgment against Wilson. Basic fairness and due process require that Wilson be given an opportunity to meet a new rule of law and a new burden of proof which were imposed for the first time on an appeal from a favorable jury verdict.

THE FEDERAL CIRCUIT DECISION WILL BE THE LAW OF THE LAND UNLESS THIS COURT GRANTS THE WRIT

The Federal Circuit now has exclusive appellate jurisdiction in all patent cases. 28 U.S.C. §1295. The Federal Circuit's decision will therefore control future patent decisions at both the district court and the appellate level. If this Court does not grant the writ, the authority of *Graver* will become permanently eroded.

CONCLUSION

The Federal Circuit has announced a new rule of patent law which is contrary to this Court's precedent, deprives Wilson of a jury trial on factual issues, and leads to illogical results. The petition for writ of certiorari should be granted.

Respectfully submitted,

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October 1, 1990

PETITIONER'S APPENDIX

United States Court of Appeals for the Federal Circuit

89-1554, -1555

WILSON SPORTING GOODS CO.,
Plaintiff-Appellee,

v.

DAVID GEOFFREY & ASSOCIATES d/b/a SLAZENGER,
and
Dunlop Slazenger Corporation
aka DUNLOP SPORTS CORPORATION,
Defendants-Appellants.

DECIDED: May 23, 1990

Before MARKEY, *Chief Judge*, RICH, *Circuit Judge*, and COWEN, *Senior Circuit Judge*.

RICH, *Circuit Judge*.

These appeals, consolidated by agreement, are from judgments of the United States District Court for the District of South Carolina in two actions brought by Wilson Sporting Goods Co. (Wilson) for infringement of United States Patent 4,560,168 ('168), entitled "Golf Ball." Trial was before a United States Magistrate by consent. In the first action, the magistrate entered judgment of liability against Dunlop Slazenger Corporation (Dunlop) upon jury verdicts of patent validity and willful infringement. In the second action, the magistrate entered summary judgment of liability against David Geoffrey & Associates (DGA) under the doctrine of

collateral estoppel, holding that DGA had been effectively represented by Dunlop in the first action. Our jurisdiction is under 28 U.S.C. §§ 1292(c)(2)(1982) and 1295(a)(1)(1982). We reverse in part and vacate in part each judgment.

BACKGROUND

A. The Proceedings

Wilson is a full-line sporting goods company and is one of about six major competitors in the golf ball business. Among its well-known balls are the ProStaff and Ultra. Dunlop is also a major player in the golf ball business. It competes head-to-head with Wilson by selling the Maxfli Tour Limited and Slazenger balls. It sells the Maxfli Tour Limited ball to numerous distributors, but sells the Slazenger ball only to DGA, which distributes the ball to U.S. customers.

On August 2, 1988, Wilson separately sued Dunlop and DGA for patent infringement in the United States District Court for the District of South Carolina. Wilson accused Dunlop of infringing claims 1, 7, 15-16, and 19-22 of its '168 patent, and made a general accusation of infringement against DGA.

The Dunlop case went to trial in late February, 1989. After a five day jury trial on the issue of liability, the jury returned special interrogatories finding the asserted claims "valid" (i.e., not proved invalid) and willfully infringed. Judgment was entered upon the verdict, Dunlop's motion for JNOV was denied, and Dunlop appealed. Wilson then moved for summary judgment of liability in the DGA case. It argued that DGA's interests in the second action had been effectively represented by Dunlop in the jury trial, and that Wilson was therefore entitled to summary judgment on the basis of collateral estoppel. The magistrate agreed, Order of May 15, 1989, and entered judgment. DGA appealed.

B. The Technology

For more than a century, golfers have been searching for a "longer" ball. As one of the parties put it, "distance sells." Inventors have experimented with numerous aspects of ball design over the years, but as United States Golf Association (U.S.G.A.) rules began to strictly control ball size, weight, and other parameters, inventors focused their efforts on the "dimples" in the ball's surface. According to one witness, new dimple designs provide the only real opportunity for increasing distance within the confines of U.S.G.A. rules.

Dimples create surface turbulence around a flying ball, lessening drag and increasing lift. In lay terms, they make the ball fly higher and farther. While this much is clear, "dimple science" is otherwise quite complicated and inexact: dimples can be numerous or few, and can vary as to shape, width, depth, location, and more.

Wilson's '168 patent claims a certain configuration of dimples on a golf ball cover. The shape and width of the dimples in the '168 patent is for the most part immaterial. What is critical is their location on the ball. The goal is to create a more symmetrical distribution of dimples.

Generally speaking, the dimples in the patent are arranged by dividing the cover of a spherical golf ball into 80 imaginary spherical triangles and then placing the dimples (typically several hundred) into strategic locations in the triangles. The triangles are constructed as follows. First, the ball is divided into an imaginary "icosahedron," as shown in Figure 1. An icosahedral golf ball is completely covered by 20 imaginary equilateral triangles, 5 of which cover each pole of the ball and ten of which surround its equator. Second, the midpoints of each of the sides of each of the 20 icosahedral

triangles are located, as shown in Figure 2. Third, the midpoints are joined, thus subdividing each icosahedral triangle into four smaller triangles.[1]

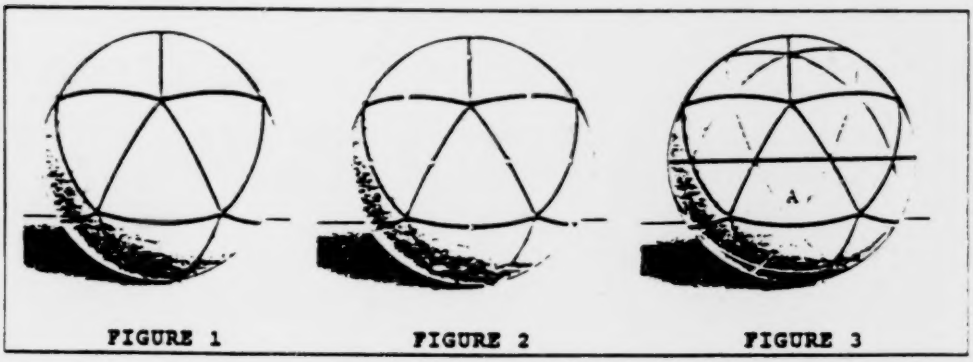

FIGURE 1 FIGURE 2 FIGURE 3

The resulting 80 imaginary triangles are shown in Figure 3. Critically important are the light lines which join the midpoints. As can be seen from Figure 3, they form the arcs of circles which pass completely around the widest part of the ball. There are six such circles, referred to in the patent as "great circles."

All of the claims of the '168 patent require this basic golf ball having eighty sub-triangles and six great circles. Particular claims require variations on the placement of dimples in the triangles, with one common theme — the dimples must be arranged on the surface of the ball so that no dimple intersects any great circle. Equivalently stated, the dimples must be arranged on the surface of the ball so that no dimple

[1] The central sub-triangles are referred to in the patent claims as "central triangles" (we have labeled one "A"), whereas the three sub-triangles surrounding each central triangle are referred to as "apical triangles." The latter are so named because each of them contains an apex or tip of the larger icosahedral triangle.

intersects the side of any central triangle. *See* Figure 4, below. When the dimples are arranged in this manner, the ball has six axes of symmetry, compared to prior balls which had only one axis of symmetry.[2]

C. Patent and Trademark Office (PTO) Proceedings

Wilson employee Steven Aoyama filed his patent application on April 27, 1984. Twenty seven claims were presented. All were allowed on the first action without comment by the examiner. The patent issued on December 24, 1985, to Wilson as assignee of Aoyama.

Claim 1, the only independent claim, reads:

> 1. A golf ball having a spherical surface with a plurality of dimples formed therein and six great circle paths which do not intersect any di[m]ples, the dimples being arranged by dividing the spherical surface into twenty spherical triangles corresponding to the faces of a regular icosahedron, each of the twenty triangles being sub-divided into four smaller triangles consisting of a central triangle and three apical triangles by connecting the midpoints [of the sides] of each of said twenty triangles along great circle paths, said dimples being arranged so that the dimples do not intersect the sides of any of the central triangles. [Bracketed insertions ours.]

The remaining 26 claims are dependent upon claim 1. They contain further limitations as to the number and location of dimples in the sub-triangles. Claim 7, for example, requires that all "central triangles [have] the same number of dimples." Other dependent claims locate dimples on the

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[2] This is Wilson's view of the prior art, which is disputed by Dunlop. The parties agree, however, that every golf ball has at least one great circle which is not intersected by dimples. It is the "mold parting line," a seam around the ball which is created where the two halves of the mold used to make the ball are joined.

perimeter of the apical triangles, so that dimples are shared by adjacent apical triangles. *See* Figure 5.

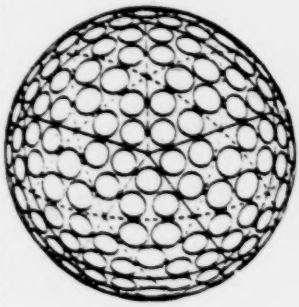

FIGURE 4

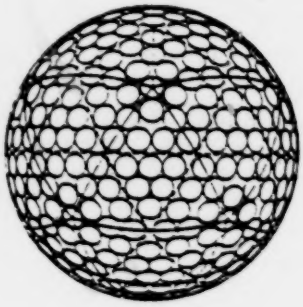

FIGURE 5

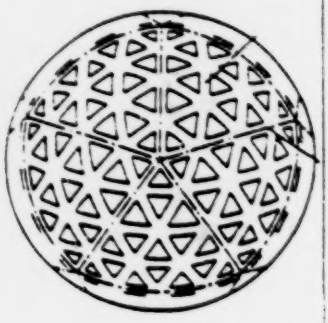

FIGURE 6

D. The Prior Art

The most pertinent prior art is a 1932 British patent to Pugh, which was cited by the examiner. Pugh teaches that a golf ball can be divided into any regular polyhedron, including an icosahedron. Pugh also discloses sub-dividing each of the twenty icosahedral triangles into smaller triangles. As an example, shown in Figure 6, Pugh divides each icosahedral triangle into sixteen sub-triangles, in contrast to the four sub-triangles required by the '168 patent. (The dimples in Pugh are triangular.) Nonetheless, Figure 6 (which is Figure 3 of the Pugh patent) makes clear that Pugh's sixteen sub-triangles are merely further divisions of four larger sub-triangles. Claim 3 of Pugh explains his invention (our emphasis):

> 3. A method of distributing a pattern with substantial uniformity over the surface of a sphere, such as a golf ball, which consists in . . . form[ing] equilateral triangles in the case of the . . . *icosahedron* . . . , dividing the sides of the triangles so found into the same number of equal or substantially equal parts and finally *joining corresponding*

points in each pair of sides of each triangle by a series of arcs of great circles, substantially as described.

The prior art also includes several patents to Uniroyal and a Uniroyal golf ball sold in the 1970's. The Uniroyal ball is an icosahedral ball having six great circles with 30 or more dimples intersecting the great circles by about 12-15 thousandths of an inch.[3] We discuss it extensively below.

E. The Accused Balls

There are four accused products, all of which the jury found to infringe. The following tables summarizes the characteristics of each accused ball:

Ball	Dimples	Cover	Infringer
Maxfli Tour Limited MD	432	Surlyn	Dunlop
Maxfli Tour Limited HT	432	Balata	Dunlop
Slazenger Interlock 480 (S)	480	Surlyn	Dunlop & DGA
Slazenger Interlock 480 (B)	480	Balata	Dunlop & DGA

The accused balls (collectively "Dunlop's balls") have dimples which are arranged in an icosahedral pattern having six great circles, but the six great circles are not dimple-free as the claims literally require. The number of dimples which intersect great circles and the extent of their intersection were disputed by the parties, but the evidence most favorable to appellee Wilson can be summarized as follows (units of last two columns are 0.001″):

Ball	Dimples	Dimples Intersected	Dimple Radius	Extent of Intersection
MD	432	60	60-80	7.5
HT	432	60	60-80	8.7
Interlock (S)	480	60	60-80	4.0
Interlock (B)	480	60	60-80	4.0

[3] Although no physical embodiment of the Uniroyal ball was admitted, there was extensive testimony on its characteristics.

ISSUES

1. Whether Dunlop's motion for JNOV on infringement was timely and supported by Dunlop's motion for a directed verdict.

2. Whether the magistrate erred as a matter of law by denying Dunlop's motion for JNOV on infringement.

OPINION

A. Dunlop's Motion For JNOV

1. Timeliness

At the threshold of this appeal, Wilson contends that the magistrate's denial of Dunlop's motion for JNOV on infringement is not properly before us for review, because Dunlop's motion for JNOV was untimely. It concedes that Dunlop's motion was *served* on opposing counsel within 10 days of the court's entry of judgment, but asserts that Fed. R. Civ. P. 50(b) requires the motion to be *filed* in the court within 10 days of judgment. We disagree.

The language of Rule 50(b) provides no clear answer to this question. It states: "Not later than 10 days after entry of judgment, a party . . . may move [for JNOV]." Nor does any Fourth Circuit decision provide guidance.[4] The Third Circuit has suggested that service within ten days should be sufficient, but has not decided the issue. *Wall* v. *United States*, 592 F.2d 154, 162 (3rd Cir. 1979). We are the first circuit court to expressly decide the question.

We are persuaded by the Notes of the Advisory Committee on the 1963 Amendments to the Federal Rules of Civil Procedure and by comparison of Rule 50 with Rules 52 and

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[4] We defer to Fourth Circuit law on this procedural question not unique to patent law. *See Wahpeton Canvas Co., Inc.* v. *Frontier, Inc.*, 870 F.2d 1546, 1550-52 & n.8, 10 USPQ2d 1201, 1206-07 & n.8 (Fed. Cir. 1989) (JNOV on infringement).

59. The Advisory Committee Notes to Rule 50 state that the time limit for Rule 50(b) is consistent with that set forth in Rule 59(b) for moving for a new trial and in Rule 52(b) for moving to amend findings by the district court. Rule 59(b) explicitly states that a motion for new trial "shall be *served* not later than ten days after entry of the judgment" (our emphasis). Similarly, the Sixth Circuit has held that a Rule 52(b) motion, which contains language very similar to Rule 50(b), is timely if *served* on the tenth day after judgment and filed on the eleventh day. *Keohane* v. *Swarco, Inc.*, 320 F.2d 429, 432 (6th Cir. 1963).

In *Keohane*, the Sixth Circuit did not consider the Advisory Committee Notes, but relied on Rule 5(d) which states:

> (d) Filing. All papers after the complaint required to be served upon a party shall be filed with the court either before service or within a reasonable time thereafter.

The court concluded "there would not be much reason to have Rule 5(d) if the papers had to be both served and filed within the 10 day period." *Id.* at 431. The court recognized that some of the Rules specify filing as the critical event, but since Rule 52(a) does not, filing could postdate service under Rule 5(d). *Id.* at 432.[5]

We find this analysis persuasive and find no reason why a motion for JNOV under Rule 50(b), which contains language similar to Rule 52(a), should receive different treatment. Moreover, if we were to hold that a motion for JNOV must be *filed* within 10 days of the court's entry of judgment, the result would be that a motion for JNOV/new trial — which Rules 50 and 59 expressly allow — could be untimely

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[5] *Compare Keohane with Hahn* v. *Becker*, 551 F.2d 741 (7th Cir. 1977) (motion under Rule 50(b) timely when filed on the 8th day but not served until the 22nd day after judgment).

insofar as it requested JNOV but timely insofar as it alternatively requested a new trial. This result has been roundly criticized by the commentators and, as we have said, the Advisory Committee on the Rules. *See, e.g.*, 9 C. Wright & A. Miller, *Federal Practice & Procedure* § 2537 at 602 (1971).

In support of its position that a motion for JNOV must be *filed* within 10 days of judgment, Wilson cites two district court cases. *See McConnell* v. *United States*, 50 F.R.D. 499, 501 (E.D. Tenn. 1970) (motion untimely when served on the eighth day but not filed until the thirteenth day after judgment); *United States* v. *Valdosta/Lowndes County Hosp. Auth.*, 91 F.R.D. 521, 523 (M.D. Ga. 1981) (motion untimely when served on the fourth day but not filed until the thirteenth day after judgment). Each case relied heavily on a statement by the Supreme Court in *Johnson* v. *New York, N.H. & H.R. Co.*, 344 U.S. 48 (1952), that a "motion for judgment notwithstanding the verdict [must be] made *in the trial court* within ten days." *Id.* at 50 (our emphasis). The district courts' analyses, however, focused on the language in *Johnson* without due regard to the context in which it was written. The issue in *Johnson* was not the timeliness of any motion, but whether a motion to "set aside the jury verdict" could be treated as if it were a motion for JNOV. *Id.* at 52. Since the Supreme Court seldom decides an issue not expressly before it, the dictum in *Johnson* is not helpful to Wilson's position.

We hold that Dunlop's motion for JNOV was timely when served on the 10th day after the magistrate's entry of judgment and filed in the district court the following day.

2. Dunlop's Prior Motion For Directed Verdict

Wilson also contends that Dunlop had no right to move for JNOV, because it failed to make a sufficiently specific prior motion for a directed verdict. *See Kinzenbaw* v. *Deere & Co.*, 741 F.2d 383, 387, 222 USPQ 929, 931 (Fed. Cir. 1984) (motion for a directed verdict is a prerequisite to a motion for

JNOV and, ultimately, to review by this court); Fed. R. Civ. P. 50. We again disagree.

The facts are undisputed. At the close of all the evidence, counsel for Dunlop made the following motion:

> BY MR. PAVELKO: Your Honor, I would move for a directed verdict at the close of all the evidence at this time on both the issue of non-infringement and invalidity.
>
> BY THE COURT: All right. It is a matter for the jury.
>
> * * *
>
> BY MR. PAVELKO: Your Honor, I am moving for both Counterclaim and —
>
> BY THE COURT: I understand. It's in the record. All right. Let's go through these instructions . . .

Wilson argues that Dunlop's motion did not satisfy Fed. R. Civ. P. 50(a), which states: "A motion for a directed verdict shall state the specific grounds therefor." Dunlop counters that under Fourth Circuit precedent, its motion was specific enough.

In *Miller* v. *Premier Corp.*, 608 F.2d 973 (4th Cir. 1973), the only Fourth Circuit case on point, the court stated the test to be whether there was a "clear failure by counsel to observe [the specificity requirement of Rule 50(a)]." *Id.* at 979 n.3. The court concluded that an oral motion for "dismissal" in a confusing colloquy between counsel and the court did not permit "confident assessment" that counsel had failed to observe Rule 50(a). *Id.*

Dunlop's statement of the motion, in itself, is insufficiently specific to satisfy the purpose of Rule 50(a), i.e. to notify an adversary of holes in his evidence so that they might be filled, if possible, before the case goes to the jury. As in *Miller*, Wilson's contention is "serious and bothersome." *Id.*

Here, however, the court cut short counsel's statement, making clear its view that the issue presented a jury question and that it wanted to move on to consider the jury instructions. It would be unfair to require counsel to have developed a statement of evidentiary shortcomings which the magistrate obviously did not want to hear, at the risk of forfeiting its right to move for JNOV.

In sum, we hold that Dunlop's motion for JNOV on infringement was timely and supported by Dunlop's motion for a directed verdict. Therefore, the question of whether the magistrate erroneously denied Dunlop's motion is properly before this court.

B. Denial Of JNOV On Infringement

1. Dunlop's Argument

The only theory of liability presented to the jury by Wilson was infringement under the doctrine of equivalents. Dunlop's argument for reversal is straightforward. It contends that there is no principled difference between the balls which the jury found to infringe and the prior art Uniroyal ball; thus to allow the patent to reach Dunlop's balls under the doctrine of equivalents would improperly ensnare the prior art Uniroyal ball as well.

2. Independent Claim 1

Infringement *may* be found under the doctrine of equivalents if an accused product "performs substantially the same overall function or work, in substantially the same way, to obtain substantially the same overall result as the claimed invention." *Pennwalt Corp.* v. *Durand-Wayland, Inc.*, 833 F.2d 931, 934, 4 USPQ2d 1737, 1739 (Fed. Cir. 1987) (en banc), *cert. denied*, 108 S.Ct. 1226, 1474 (1988). Even if this test is met, however, there can be no infringement if the asserted scope of equivalency of what is literally claimed would encompass the prior art. *Id.; Senmed, Inc.* v. *Richard-Allan Medical Indus.*, 888 F.2d 815, 821, 12 USPQ2d 1508, 1513 (Fed. Cir. 1989). This issue — whether an asserted

range of equivalents would cover what is already in the public domain — is one of law, which we review *de novo, Loctite Corp.* v. *Ultraseal Ltd.*, 781 F.2d 861, 870, 228 USPQ 90, 96 (Fed. Cir. 1985), but we presume that the jury resolved underlying evidentiary conflicts in Wilson's favor, *see DMI, Inc.* v. *Deere & Co.*, 802 F.2d 421, 425, 231 USPQ 276, 279 (Fed. Cir. 1986).

This court on occasion has characterized claims as being "expanded" or "broadened" under the doctrine of equivalents. *See, e.g., Intervet America* v. *Kee-Vet Laboratories*, 887 F.2d 1050, 1054, 12 USPQ2d 1474, 1477 (literal meaning of claim is expanded under the doctrine of equivalents); *Brenner* v. *United States*, 773 F.2d 306, 308, 227 USPQ 159, 161 (Fed. Cir. 1985) (describing doctrine of equivalents as "broadening" claims); *Thomas & Betts Corp.* v. *Litton Sys., Inc.*, 720 F.2d 1572, 1582, 220 USPQ 1, 7 (Fed. Cir. 1983) (claims have a "broadened scope"); *Carman Indus., Inc.* v. *Wahl*, 724 F.2d 932, 942, 220 USPQ 481, 489 (Fed. Cir. 1983) ("Even with this expansion in the scope of the claims . . ."). Precisely speaking, these characterizations are inaccurate.

To say that the doctrine of equivalents extends or enlarges *the claims* is a contradiction in terms. The claims — i.e., the scope of patent protection *as defined by* the claims — remain the same and application of the doctrine *expands the right to exclude* to "equivalents" of what is claimed.

The doctrine of equivalents, by definition, involves going beyond any permissible interpretation of the claim language; i.e., it involves determining whether the accused product is "equivalent" to what is described by the claim language.

This distinction raises an interesting question: If the doctrine of equivalents does not involve expanding the claims, why should the *prior art* be a limitation on the range of permissible equivalents? It is *not* because we construe

claims narrowly if necessary to sustain their validity. *E.g., Lewmar Marine, Inc.* v. *Barient, Inc.*, 827 F.2d 744, 749, 3 USPQ2d 1766, 1770 (Fed. Cir. 1987). As we have said, the doctrine of equivalents does not involve expansion of the *claims*. Nor is it because to hold otherwise would allow the patentee to preempt a product that was in the public domain prior to the invention. The accused products here, as in most infringement cases, were never "in the public domain." They were developed long after the invention and differ in several respects from the prior art.

The answer is that a patentee should not be able to obtain, under the doctrine of equivalents, coverage which he could not lawfully have obtained from the PTO by literal claims. The doctrine of equivalents exists to prevent a fraud on a patent, *Graver Tank & Mfg. Co.* v. *Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950), *not* to give a patentee something which he could not lawfully have obtained from the PTO had he tried. Thus, since prior art always limits what an inventor could have claimed, it limits the range of permissible equivalents of a claim.

Whether prior art restricts the range of equivalents of what is literally claimed can be a difficult question to answer. To simplify analysis and bring the issue onto familiar turf, it may be helpful to conceptualize the limitation on the scope of equivalents by visualizing a *hypothetical* patent claim, sufficient in scope to *literally* cover the accused product. The pertinent question then becomes whether that hypothetical claim could have been allowed by the PTO over the prior art. If not, then it would be improper to permit the patentee to obtain that coverage in an infringement suit under the doctrine of equivalents. If the hypothetical claim could have been allowed, then *prior art* is not a bar to infringement under the doctrine of equivalents.

Viewing the issue in this manner allows use of traditional patentability rules and permits a more precise analysis than determining whether an *accused product* (which has no

claim limitations on which to focus) would have been obvious in view of the prior art. *Compare with Ryco, Inc.* v. *Ag-Bag Corp.*, 857 F.2d 1418, 1426, 8 USPQ2d 1323, 1330 (Fed. Cir. 1988) (comparing accused product with prior art). In fact, the utility of this hypothetical broader claim may explain why "expanded claim" phraseology, which we now abandon, had crept into our jurisprudence. *See Carman Indus., Inc.* v. *Wahl*, 724 F.2d 932, 942, 220 USPQ 481, 489 (Fed. Cir. 1983) (affirming finding of infringement because claims as "expand[ed]" would not have been obvious in view of prior art). Finally, it reminds us that Wilson is seeking patent coverage beyond the limits considered by the PTO examiner.

In this context it is important to remember that the burden is on Wilson to prove that the range of equivalents which it seeks would not ensnare the prior art Uniroyal ball. The patent owner has always borne the burden of proving infringement, *see Under Sea Indus., Inc.* v. *Dacor Corp.*, 833 F.2d 1551, 1557, 4 USPQ2d 1772, 1776 (Fed. Cir. 1987), and there is no logical reason why that burden should shift to the accused infringer simply because infringement in this context might require an inquiry into the patentability of a *hypothetical* claim. Any other approach would ignore the realities of what happens in the PTO and violate established patent law. Leaving this burden on Wilson does not, of course, in any way undermine the presumed validity of Wilson's actual patent claims. In the present situation, Wilson's claims will remain valid whether or not Wilson persuades us that it is entitled to the range of equivalents sought here.

The specific question before us, then, is whether Wilson has proved that a hypothetical claim, similar to claim 1 but broad enough to literally cover Dunlop's balls, could have been patentable. As we have explained above, Dunlop's balls are icosahedral balls with six great circles, five of which are intersected by dimples. The balls contain 432 to 480 dimples, 60 of which intersect great circles in amounts from 4 to 9 thousandths of an inch. In order for a hypothetical claim to

cover Dunlop's balls, its limitations must permit 60 dimples to intersect the great circles by at least 9 thousandths of an inch. Thus, the issue is whether a hypothetical claim directed to an icosahedral ball having six great circles intersected by 60 dimples in amounts up to 9 thousandths of an inch could have been patentable in view of the prior art Uniroyal ball.

On the Uniroyal ball, the extent to which the dimples intersect the great circles is from 12 to 15 thousandths of an inch. Stated as a percentage of dimple radius, the intersection permitted in the hypothetical claim is 13% or less, and the dimples on the Uniroyal ball intersect by 17% to 21%. The number of dimples which intersect the great circles is also similar for the hypothetical claim and the prior art Uniroyal ball. The pertinent hypothetical claim limitation reads on any ball having 60 or less intersecting dimples. This limitation reads on the prior art Uniroyal ball, which has 30 intersecting dimples. If viewed in relative terms, the hypothetical claim limitation reads on any ball which has less than 14% of its dimples intersecting great circles. Roughly 12% of the dimples on the Uniroyal ball intersect great circles.

We hold that these differences are so slight and relatively minor that the hypothetical claim — which permits twice as many intersecting dimples, but with slightly smaller intersections — viewed as a whole would have been obvious in view of the Uniroyal ball. As Dunlop puts it, there is simply "no principled difference" between the hypothetical claim and the prior art Uniroyal ball. Accordingly, Wilson's claim 1 cannot be given a range of equivalents broad enough to encompass the accused Dunlop balls.

3. Dependent Claims

Before separately analyzing the asserted dependent claims, we should first explain why we are bothering to do so. This court has stated: "It is axiomatic that dependent claims cannot be found infringed unless the claims from which they depend have been found to have been infringed." *Wahpeton Canvas Co., Inc.* v. *Frontier, Inc.*, 870 F.2d 1546, 1553 & n. 9,

10 USPQ2d 1201, 1208 & n. 9 (Fed. Cir. 1989). While this proposition is no doubt generally correct, it does not apply in the circumstances of this case.

Here, we have reversed the judgment of infringement of independent claim 1 solely because the asserted range of equivalents of the claim limitations would encompass the prior art Uniroyal ball. The dependent claims, of course, are *narrower* than claim 1; therefore, it does not automatically follow that the ranges of equivalents of these narrower claims would encompass the prior art, because of their added limitations. In contrast, in *Wahpeton Canvas* the court affirmed the judgment of noninfringement of the independent claims because the accused products did not include particular claim limitations or their substantial equivalents. 870 F.2d at 1552, 10 USPQ2d at 1207. Where that is the reason for noninfringement of the independent claim, it follows that, for the same reason, the dependent claims will not be infringed. But that is not true here and we therefore turn to the asserted dependent claims, to determine whether they can be infringed under the doctrine of equivalents.

Implicit in the jury's conclusion that the Dunlop balls infringe the asserted dependent claims is a finding that the Dunlop balls have, in addition to the features we have described above, the further limitations of the dependent claims.[6] Each dependent claim contains a small variation on the theme of an icosahedral ball having six great circles. We have considered each asserted dependent claim and conclude that none could be given a range of equivalents broad enough to encompass Dunlop's balls because that would extend Wilson's patent protection beyond hypothetical claims it could lawfully have obtained from the PTO.

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[6] The jury's decision was embodied in answers to special verdicts, which requested only that the jury answer "infringed" or "not infringed" to each claim.

The jury found that the central triangles of each Dunlop ball have "the same number of dimples," which is the additional limitation of claim 7. This feature, however, is shown in the Pugh patent. *See* Figure 6, above. The jury also found, as required by claim 15, that some dimples on each Dunlop ball reside completely within the apical triangles and some dimples intersect two of the sides of the apical triangles. This arrangement again is disclosed in the Pugh patent, as well as in Uniroyal patent 4,141,559 (U.S.), Uniroyal patent 1,402,273 (British), and Uniroyal patent 1,407,730 (British). Necessarily implied in the above findings, the jury found that each Dunlop ball has the combined features of claims 7 and 15, which is what claim 16 requires. Yet Wilson has failed to persuade us that the range of equivalents sought for any of these claims could be broad enough to encompass Dunlop's balls without also encompassing the Uniroyal ball and other cited prior art.

The jury also found that the Dunlop balls (except for the "480" balls, not accused) have a one-fifth dimple at the apexes of their apical triangles, as required by claim 19. This arrangement, as is the arrangement in which each apical triangle has some half dimples (claim 20), is again disclosed by each of the three Uniroyal patents. Wilson has failed to persuade us that the range of equivalents sought for these claims, as for claims 21 and 22 (which contain further variations on the number and/or fractions of the dimples in the apical triangles), could be broad enough to encompass Dunlop's balls without encompassing the Uniroyal ball and other prior art of record.

C. Validity

We need not review the validity of asserted patent claims when we can decide a case on the basis of noninfringement. *See, e.g., Vieau* v. *Japax, Inc.*, 823 F.2d 1510, 1517, 3 USPQ2d 1094, 1100 (Fed. Cir. 1987). Accordingly, we vacate the magistrate's judgment that none of the asserted claims was proved invalid.

CONCLUSION

Dunlop's motion for JNOV on infringement was timely and supported by Dunlop's motion for a directed verdict. Therefore, the question of whether the magistrate erroneously denied Dunlop's motion was properly before this court. We conclude that the magistrate erred in denying Dunlop's motion for JNOV on infringement, because, as a matter of law, a range of equivalents broad enough to cover Dunlop's balls would also have encompassed the prior art.

Accordingly, in No. 89-1554 we reverse the judgment of infringement by Dunlop and vacate the judgment that the claims were not proved invalid. In No. 89-1555, we reverse the judgment of infringement by DGA, which was based upon the doctrine of collateral estoppel and the judgment against Dunlop in 89-1554, and vacate the judgment that the claims were not proved invalid.

COSTS

No costs.

89-1554 REVERSED IN PART, VACATED IN PART
89-1555 REVERSED IN PART, VACATED IN PART

United States Court of Appeals for the Federal Circuit

89-1554, -1555

WILSON SPORTING GOODS CO.,
Plaintiff-Appellee,

v.

DAVID GEOFFREY & ASSOCIATES d/b/a SLAZENGER,

and

DUNLOP SLAZENGER CORPORATION
aka DUNLOP SPORTS CORPORATION,
Defendants-Appellants.

Judgment

ON APPEAL from the	United States District Court for the District of South Carolina
in CASE NO(S).	C/A #6:88-2015-3 and C/A #6:88-2016-3

This CAUSE having been heard and considered, it is

ORDERED and ADJUDGED:	89-1554 REVERSED IN PART, VACATED IN PART 89-1555 REVERSED IN PART, VACATED IN PART

ENTERED BY ORDER OF THE COURT

DATED May 23, 1990

Francis X. Gindhart, Clerk

ISSUED AS MANDATE: JULY 12, 1990

United States Court of Appeals for the Federal Circuit

89-1554, -1555

WILSON SPORTING GOODS CO.,

Plaintiff-Appellee,

v.

DAVID GEOFFREY & ASSOCIATES d/b/a SLAZENGER,

and

DUNLOP SLAZENGER CORPORATION
aka DUNLOP SPORTS CORPORATION,

Defendants-Appellants.

ORDER

ORDER

Before MARKEY, Chief Judge, RICH, Circuit Judge, and COWEN, Senior Circuit Judge.

A petition for rehearing having been filed in this case, and a response thereto having been invited by the court and filed,

UPON CONSIDERATION THEREOF, it is

ORDERED that the petition for rehearing be, and the same hereby is, denied.

The suggestion for rehearing in banc is under consideration.

The mandate will issue on July 12, 1990.

FOR THE COURT,

Francis X. Gindhart
Clerk

Dated: July 5, 1990

cc: DAVID B. TULCHIN
JOHN W. CHESTNUT

WILSON SPORTING V DAVID GEOFFREY, 89-1554 (DCT - 88-2015)

Note: This order has not been prepared for publication in a reporter.

United States Court of Appeals for the Federal Circuit

89-1554, -1555

WILSON SPORTING GOODS CO.,
Plaintiff-Appellee,

v.

DAVID GEOFFREY & ASSOCIATES d/b/a SLAZENGER,
and
DUNLOP SLAZENGER CORPORATION
aka DUNLOP SPORTS CORPORATION,
Defendants-Appellants.

ORDER

ORDER

A suggestion for rehearing in banc having been filed in this case,

UPON CONSIDERATION THEREOF, it is

ORDERED that the suggestion for rehearing in banc be, and the same hereby is, declined.

FOR THE COURT,

Francis X. Gindhart
Clerk

Dated: July 26, 1990

cc: DAVID B. TULCHIN
JOHN W. CHESTNUT

WILSON SPORTING V DAVID GEOFFREY, 89-1554 (DCT 88-2015)

Note: This order has not been prepared for publication in a reporter.

IN THE

District Court of the United States

FOR THE DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION

WILSON SPORTING GOODS CO., *Plaintiff,*	Civil Action No. 6:88-2016-3K
vs.	
DUNLOP SLAZENGER CORPORATION, *Defendant.*	SPECIAL VERDICT

Your verdict in this case will consist of your answers to the following questions:

1. Do you find that Dunlop has proved by clear and convincing evidence that any of the following listed claims of the Wilson patent are invalid? Answer separately as to each claim by writing the word "valid" or "invalid" opposite each claim number:

Claim		Claim	
1	VALID	16	VALID
2	VALID	17	VALID
3	VALID	18	VALID
4	VALID	19	VALID
5	VALID	20	VALID
6	VALID	21	VALID
7	VALID	22	VALID
8	VALID	23	VALID
9	VALID	24	VALID
10	VALID	25	VALID
11	VALID	26	VALID
12	VALID	27	VALID
13	VALID	28	VALID
14	VALID	29	VALID
15	VALID		

Claim

2. If you have found in your answer to question number one that any of the following claims are valid, then do you find that Wilson has proved by a preponderance of the evidence that any of the following claims are infringed?

   Write "infringed" or "not infringed" opposite each claim number:

Claim	MD Ball	HT Ball	Slazenger 480 (Surlyn)	Slazenger 480 (Balata)
1	INFRINGED	INFRINGED	INFRINGED	INFRINGED
7	INFRINGED	INFRINGED	INFRINGED	INFRINGED
15	INFRINGED	INFRINGED	INFRINGED	INFRINGED
16	INFRINGED	INFRINGED	INFRINGED	INFRINGED
19	INFRINGED	INFRINGED	Omit	Omit
20	INFRINGED	INFRINGED	INFRINGED	INFRINGED
21	INFRINGED	INFRINGED	Omit	Omit
22	INFRINGED	INFRINGED	Omit	Omit

3. If you find that any of the claims of the Wilson patent are both valid and infringed, then do you find that Wilson has proved, by clear and convincing evidence, that Dunlop's infringement was willful?

YES

(Yes or No)

The answers set forth above constitute our verdict.

3/3/89 — Date

Jane Shipley — Foreperson

United States District Court

DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION

WILSON SPORTING GOODS CO. v. DUNLOP SLAZENGER CORPORATION aka DUNLOP SPORTS CORPORATION	AMENDED PARTIAL JUDGMENT IN A CIVIL CASE CASE NUMBER: 6:88-2016-3

☒ **Jury Verdict.** This action came before the Court for a trial by jury. The issues have been tried and the jury has rendered its verdict as to liability only.

☐ **Decision by Court.** This action came to trial or hearing before the Court. The issues have been tried or heard and a decision has been rendered.

IT IS ORDERED AND ADJUDGED

that Dunlop Slazenger Corporation failed to carry its burden to prove that Claims 1-29 of the plaintiff's patent are invalid and,

that Claims 1, 7, 15, 16, 19, 20, 21, 22 of the plaintiff's patent were willfully infringed by defendant's MD ball and HT ball and that Claims 1, 7, 15, i6 and 20 of plaintiff's patent were willfully infringed by defendant's Slazenger 480 Surlyn ball and Slazenger 480 Balata ball.

Form Approved:

William M. Catoe, Jr.
U.S. Magistrate

May 6, 1989
Date

ANN A. BIRCH
Clerk

KIERON CAMPBELL
(By) Deputy Clerk

United States District Court

DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION

WILSON SPORTING GOODS CO. v. DUNLOP SLAZENGER CORPORATION aka DUNLOP SPORTS CORPORATION	PARTIAL JUDGMENT IN A CIVIL CASE CASE NUMBER: 6:88-2016-3

☒ **Jury Verdict.** This action came before the Court for a trial by jury. The issues have been tried and the jury has rendered its verdict as to liability only.

☐ **Decision by Court.** This action came to trial or hearing before the Court. The issues have been tried or heard and a decision has been rendered.

IT IS ORDERED AND ADJUDGED

that Claims 1 through 29 of the plaintiff's patent are valid and,

that Claims 1, 7, 15, 16, 19, 20, 21, 22 of the plaintiff's patent were willfully infringed by defendant's MD ball and HT ball and that Claims 1, 7, 15, 16 and 20 of plaintiff's patent were willfully infringed by defendant's Slazenger 480 Surlyn ball and Slazenger 480 Balata ball.

Form Approved:

William M. Catoe, Jr.
U.S. Magistrate

March 5, 1989
Date

ANN A. BIRCH
Clerk

KIERON CAMPBELL
(By) Deputy Clerk

IN THE

United States District Court

FOR THE DISTRICT OF SOUTH CAROLINA
GREENVILLE DIVISION

WILSON SPORTING GOODS CO., *Plaintiff,*	Civil Action No. 6:88.2016.3
v.	
DUNLOP SLAZENGER CORPORATION, *Defendant.*	ORDER

This cause having been brought on defendant's Motion to Amend Judgment pursuant to Rule 59(e) F.R. Civ. P; and the Court having heard the arguments of the parties, it is hereby ordered and adjudged that defendant's Motion to Amend the Judgment is granted; and it is further ordered that the Clerk of the Court is directed to enter an Amended Partial Judgment as follows:

IT IS ORDERED AND ADJUDGED

that Dunlop Slazenger Corporation failed to carry its burden to prove that Claims 1-29 of the plaintiff's patent are invalid and,

that Claims 1, 7, 15, 16, 19, 20, 21, 22 of the plaintiff's patent were willfully infringed by defendant's MD ball and HT ball and that Claims 1, 7, 15, 16 and 20 of plaintiff's patent were willfully infringed by defendant's Slazenger 480 Surlyn ball and Slazenger 480 Balata ball.

WILLIAM M. CATOE, JR.
U. S. MAGISTRATE

Dated: May 5, 1989
Greenville, SC